

## Claims

1. A method of testing adherence of a thin film on a substrate, said method comprising:  
producing insonification pressure using microcavitation,  
subjecting the thin film to the insonification pressure,  
plotting erosion time of said thin film versus insonification pressure,  
determining a maximum instantaneous erosion pressure based on said plotting.
2. The method of claim 1, wherein said plotting includes observing a spot erosion of said thin film.
3. The method of claim 3, wherein said instantaneous erosion pressure is determined by extrapolating a plot of erosion time versus pressure.
4. A method of determining an endurance limit under cyclic loading of a thin film bonded to substrate, said method comprising:  
producing an insonification pressure using microcavitation energy,  
subjecting the thin film to variations in level of said insonification pressure,  
determining an insonification pressure level at which said thin film may be subjected indefinitely without erosion whereby to indicate said endurance limit.
5. An apparatus to test adherence of a thin film to a substrate comprising:  
a source of insonification pressure that uses microcavitation,  
a test bed to support and position the substrate embodying said thin film in a region of insonification pressure, and

a timer to measure elapse time from start of insonification pressure to a time of observation of erosion.

6. The apparatus of claim 5, further including a level controller to control the level of insonification pressure.

7. The apparatus of claim 5, wherein said test bed supports said substrate in at or near a focal region of said insonification pressure.